Title	Viscoelastic Properties of Asphalts
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Citation	Bulletin of the Institute for Chemical Research, Kyoto University (1963), 40(5-6): 404-404
Issue Date	1963-01-30
URL	http://hdl.handle.net/2433/75913
Right	
Type	Departmental Bulletin Paper
Textversion	publisher

particles leading to the ground state and the excited sttes of Mg^{25} from the reaction $Al^{27}(d, \alpha)Mg^{25}$ with 14.7 MeV deuterons, by using a semiconductor detector of p-n junction. The differential cross-sections of the reactions leading to the single levels of Mg^{25} are compared with a formula obtained from the two-nucleon pick-up theory. The experimental angular distribution for each alpha group with a comparatively large cross-section is in agreement, at least in forward angle, with the theoretical curve. The alpha group leading to the 3.4 MeV level of Mg^{25} is considered to come from the transition to the 9/2+ state rather than to the 3/2- state. The total cross-sections for the levels of Mg^{25} corresponding to the same K-band 5/2+ as that of the ground state of Al^{27} are larger than the others.

Viscoelastic Properties of Asphalts

Hiroshi AIDA

Journal of Japan Petrolium Institute, 4, 845 (1961)

Viscoelastic propertis of several kinds of asphalts were measured by a cone-and-plate type viscometer. The viscosity coefficients, the delayed elastic compliances at steady state, and the retardation spectra were obtained from the strain-time and recovery curves at various temperatures.

The following results were obtained: (1) The viscosity coefficients when expressed by Andrade's equation gave the apparent activation energies as 30~40 kcal/mole. (2) The delayed elastic compliances at steady state were in the order of $10^{-6}cm^2$/dyne and increased with the rise in temperature. (3) When time-temperature superposition principle was applied to the asphalt, the apparent activation energies for retardation process were 20~28 kcal/mole. (4) The retardation spectra were wedge type with a slope of about 0.4 on logrithmic scales independent to the kinds of asphalts, and the maximum value of each spectrum shifted to the longer time with decrease of resins to asphaltenes or oil to asphaltenes ratio.

Viscoelastic Properteis of Bentonite Pastes

Hiroshi AIDA, Tetsuya HANAI and Rempei GOTOH

Nippon Kagaku Zasshi, (Journal of the Chemical Society of Japan, Pure Chemistry Section) 83, 536 (1962)

Viscoelastic properties of several kinds of bentonite pastes were measured under a constant shearing stress by use of a cone-and-plate type viscometer. It was found that the paste had two threshold values of shearing stress which were